

NAME: _____ ADM. NO: _____

DATE: _____ CLASS: _____

BIOLOGY

Form 4

January 2021

TIME: 1 HOUR

MARANDA HIGH SCHOOL

Post Mock 1- 2021

Kenya Certificate of Secondary Education (K.C.S.E.)

Biology-Form 4

1 hour

INSTRUCTIONS TO CANDIDATES

- *Write your name, admission number, date and class in the spaces provided.*
- *Answer all the questions in this paper.*
- *Answers should be written in the spaces provided.*

FOR EXAMINER'S USE ONLY

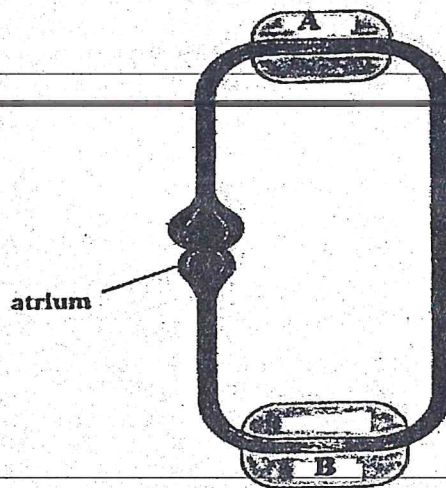
QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
1-24	80	

1. The study of birds is referred to as?

(1 mark)

2. A field of view had a radius of 2cm. A student observed 10 onion cells across the field of view. Calculate the size of each of the onions cells. (2 marks)

3. Below is a diagram of a certain circulatory system.



a) (i) Identify the circulatory system.

(1 mark)

(ii) In which class would you find the animals with this type of circulatory system?

(1 mark)

b) Name the parts labeled A and B:

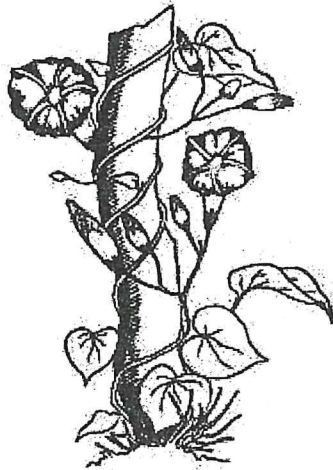
(2 marks)

A

B

4. A food substance is suspected to contain proteins. Briefly describe the test you would carry out on the food substance to confirm that it contains protein. (4 marks)

5. The diagram below shows a certain stem twining clockwise around a support.



- a) Identify the type of response shown. (1 mark)

- b) Describe how the response occurs. (3 marks)

6. A man and a woman got a child who was an albino. What is the probability of their 5th and 6th children being albino? show your working (5 marks)

7. Why is it difficult to calculate the respiratory quotient (RQ) in plants? (2 marks)

8. Below is a sequence of the bases along the DNA strand.

T	C	G	A	G	C	T	A
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- (a) Draw a m-RNA strand that would be gotten from this DNA strand. (1 mark)

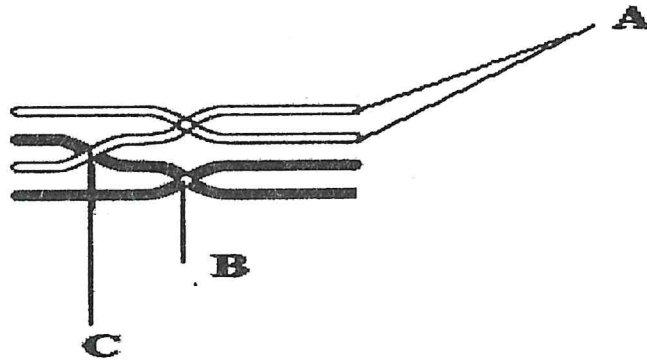
- (b) State **three** structural differences between DNA and RNA. (3 marks)

9. (a) State the functions of oxytocin hormone in females. (2 marks)

- (b) What is the role of luteinizing hormone in human in males? (2 marks)

10. Distinguish between transpiration and guttation. (2 marks)

11. The diagram below shows the structures of chromosomes.



- (a) Name the parts labeled A, B and C. (3 marks)

A _____

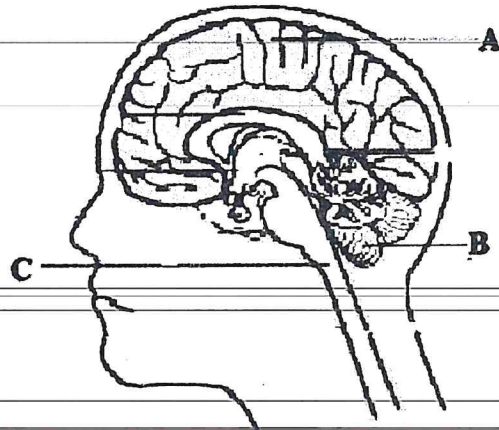
B _____

C _____

(b) Identify the type of nuclear division illustrated in the diagram below.

(1 mark)

12. The diagram below shows surface view of human brain.



(a) Name the parts labelled B and C.

(2 marks)

B _____

C _____

(b) State what would happen if the part labelled B was damaged. (2 marks)

(c) State two functions of the part labelled A.

(2 marks)

13. Name the type of response exhibited by the following.

(3 marks)

a) Leaves of *Mimosa pudica* when they fold after being touched.

b) Euglena when it swims towards source of light.

c) Sperms when they swim towards the ovum.

14. Distinguish between ligaments and tendons. (2 marks)

15. Most of the carbon (IV) oxide is transported from tissues to the lungs within red blood cells and not within the plasma. State two advantages of this mode of transportation. (2 marks)

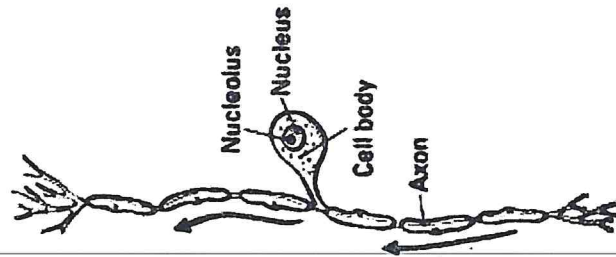
16. A tilapia fish was found to be 40cm in length and its length from its anus to tail was 20cm.

(a) Calculate the tail power of the fish. (2 marks)

(b) What is the significance of a high tail power? (1 mark)

17.(a) Identify with a reason the nerve cell represented below.

(2 marks)



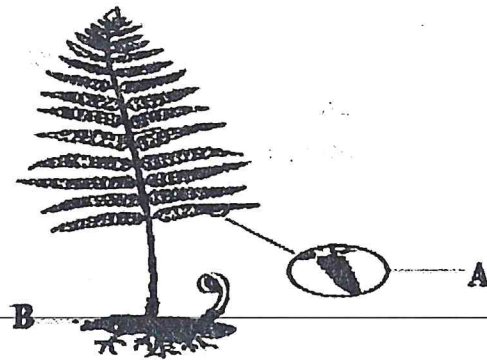
Identity _____

Reason _____

(b) What is the function of this nerve cell?

(1 mark)

18. The diagram below represents a fern plant.



(a) Name the parts labeled A and B:

(2 marks)

A _____

B _____

(b) Name the division to which the plant belongs.

(1 mark)

(c) State the function of the part labeled A.

(1 mark)

(d) A camel stores fat in the hump primarily as water source. By what metabolic process would water be made available from fat? (1 mark)

19. State **three** functions of Golgi apparatus. (2 marks)

20. Explain the role of antidiuratic hormone when there is excess water in the human body. (3 marks)

21. Give **one** word for the following descriptions. (3 marks)

(i) Occurrence of deposits of insoluble salts uric acid, or amino acids in the kidneys.

(ii) Occurrence of sugar in the urine due to insufficient insulin in blood.

(iii) Infection of glomeruli by bacteria or virus.

22.(a) State **three** important events that occur during interphase of mitosis. (3 marks)

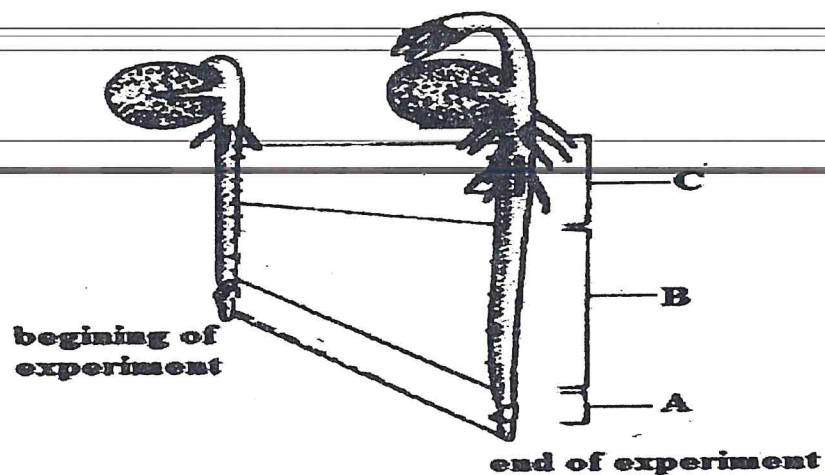
(b) In a certain flowering plant, the number of chromosomes in each cell in the radicle is 16. State the number of chromosomes in the: (3 marks)

(i) The zygote _____

(iii) Cell of endosperm _____

(iv) Generative nucleus _____

23. The diagram below show the results obtained in an experiment on growth of a bean seedling.



(a) Suggest the aim of the experiment. (1 mark)

(b) State the processes that occur in each of the regions marked: (2 marks)

B _____

C _____

24. Identify the respiratory surfaces used by the following organisms: (3 marks)

i) Locust _____

ii) Nile perch _____

iii) Paramecium _____